

What is claimed is:

1. An apparatus for transporting a volume of liquid suspension including a body fluid having a viscosity into and out of a slide assembly, comprising:
  - a database storing data related to different liquid suspensions including data representative of durations of slide assembly filling, data representative of durations of slide assembly purging;
  - a controller responsive to an input signal representative of a selected liquid suspension said controller filling of the slide assembly with said selected liquid suspension for a time period determined by corresponding filling data in said database, said controller further having a purging mode for purging of the slide assembly for a time period determined by corresponding purging data in said database.
2. The apparatus defined in claim 1 wherein the database further has data representative of durations of slide assembly rinsing for respective liquid suspensions and wherein said controller further has a rinsing mode in which the controller enables rinsing of the slide assembly for a duration determined by corresponding rinsing data in the database.
3. The apparatus defined in claim 1 wherein the apparatus further comprises a menu screen showing a list of the stored liquid suspensions, and a liquid suspension selector operated by the user to select the filling and purging modes data associated with the selected liquid suspension.
4. An apparatus for transporting liquid suspensions of different viscosities for analysis within an optical device from test tubes which contain a liquid suspension having a viscosity that influences the time for a sample of the suspension to

travel between a test tube and a slide assembly for analysis and purging of the sample, comprising:

slide assembly in flow communication with one of said test tubes for viewing a sample of liquid suspension selected by a user;

a pump assembly having an aspiration mode to pump the sample into the slide assembly, and a purging mode to pump the sample from the slide assembly;

a database for storing pumping data for pumping different liquid suspensions of different viscosities into and out of the slide assembly with said pump assembly

a controller responsive to an input signal representative of a selected liquid suspension sample for applying corresponding pumping data from the database to control the pump assembly to aspirate the desired liquid suspension from said one test tube into said slide assembly and to purge the liquid suspension from the slide assembly

5. The apparatus defined in claim 6 wherein the wherein the pumping data in the database comprises data representative of values of durations for respective liquid suspensions to travel into and from the slide assembly.

6. The apparatus defined in claim 6 wherein the aspiration probe has a handle sized and shaped to mount on an open end of a test tube and a needle extending through said handle and being displaceable relative to the handle to adjust the length of the needle extending into a test tube apparatus defined in 9 wherein the aspirator probe further has an adjustable component selected from the group consisting of a compression fitting and a regulating nut.

7. The apparatus defined in 9 wherein the aspirator probe further has an adjustable component selected from the group consisting of a compression fitting and a regulating nut.

8. The apparatus defined in claim 6 wherein the slide assembly has a viewing chamber provided with a counting grid formed of a plurality of grid lines.

9. The apparatus defined in claim 11 wherein the viewing chamber is formed of glass and wherein said grid lines are etched into the glass so as not to obstruct the view of the liquid suspension sample.

10. The apparatus defined in claim 6 wherein the apparatus has a plurality of containers respectively for storing flushing liquid, saline and bleach, the containers being in selective flow communication with the pump assembly.

11. The apparatus defined in claim 6 wherein the controller is a microprocessor, the apparatus further comprising software executing on the microprocessor for sequentially operating the pump assembly in the aspiration and purging modes

12. The apparatus defined in claim 6 further comprising software executing on the controller for actuating the pump assembly at a uniform pump rate while controlling the duration of the aspiration and purging modes with data retrieved from the database as a function of the user's selection of the liquid suspension sample.

13. The apparatus defined in claim 6 further comprising software executing on the controller for actuating the pump assembly at a uniform duration of the aspiration and purging modes while controlling pumping rate with data retrieved from

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the database as a function of the user's selection of the liquid suspension sample.

14. The apparatus defined in claim 6 wherein the purging mode is a manual purging mode to return the liquid suspension sample from the slide assembly back to the test tube.

15. The apparatus defined in claim 6 wherein the apparatus further comprises a stepper motor controlled by the microprocessor to actuate the pump assembly at a step rate sufficient to displace a fixed volume of a liquid suspension

16. An apparatus for transporting a volume of liquid suspensions from test tubes containing liquid suspensions which may have different viscosities for optical analysis inside a slide assembly comprising:

aspirator probe for extracting a liquid sample from a test tube and being in flow communication with the slide assembly the aspirator probe having an exterior surface;

a pump assembly controller having software to establish

i. an aspiration mode, wherein a predetermined volume of the suspension sample is displaced through the aspirator probe into the slide assembly,

ii. a purge mode, during which the predetermined volume is displaced from the slide assembly,

iii. a rinsing mode to wash the exterior of the aspirator probe; said software being responsive to an input which corresponds to a selected liquid suspension in a test tube to initiate the pump assembly to aspire a sample from the selected liquid suspension into said slide assembly and to subsequently purge the liquid suspension from the slide assembly; and

a washing station for receiving the aspirator probe upon completing the aspiration and purging modes, said washing station having a plurality of washing heads positioned to deliver a washing fluid over the exterior surface of the aspirator probe in response to a signal from the controller and a plurality of wiping elements positioned to grab the exterior surface of the probe to wipe it clean as the aspirator probe is being removed from the washing station.

17. The apparatus defined in claim 20 further comprising at least one washing head positioned to deliver washing fluid onto the wiping elements to keep them clean.

18. A method for transporting samples of diverse fluids having different viscosities from a test tube into a slide assembly through tubing using a pump located at one side of the slide assembly and for purging the slide assembly and tubing with a flushing solution located on a distal side of the pump, comprising the steps of:

storing characteristic data of respective fluids in a database wherein the characteristic data is representative of the pumping requirements to draw samples of the fluids from test tubes through the tubing into the slide assembly and for purging the fluids from the slide assembly and tubing;

generating a signal representative of a fluid stored in a test tube to initiate the drawing of a sample thereof in accordance with its associated stored characteristic data; and

activating the pump in accordance with the characteristic data specific to the particular fluid within the test tube so as to convey a sample thereof into the slide assembly and to purge the sample with said flushing solution from the slide assembly and tubing after an examination of the sample while it is within the slide assembly.

19. The method as claimed in claim 23 wherein said signal generating step further includes the steps of:

displaying a list of fluids for which characteristic data is stored;

selecting the fluid from the list to produce said signal; and

applying characteristic data associated with said selected fluid to said pump to draw a sample of the fluid from the test tube into said slide assembly.

20. The method as claimed in claim 23 and further including the steps of:

cleaning an exterior surface of a probe used to draw a sample of the fluid from the test tube after the fluid has been purged from the slide assembly and tubing; and

inhibiting the pump activating step from drawing a subsequent sample of fluid from said test tube until residue of fluid remaining on said exterior surface of the probe from a previous probe insertion into a test tube has been cleaned away.

21. The method as claimed in claim 25 wherein said cleaning step further includes the step of:

placing the probe after its removal from a test tube containing a said fluid into a washing station;

detecting the presence of the probe at the washing station; and  
in response to said detecting step clamping wipers against said probe so that said exterior surface of the probe is wiped upon a withdrawal of the probe from said washing station.

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